Remarks

In view of the above amendments and the following discussion, the applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Furthermore, the applicants believe that all of the claims satisfy the requirements of 35 U. S. C. § 112. Thus, the applicants believe that all of these claims are in allowable form.

REJECTIONS

A. 35 U. S. C. § 112

1. Claim 4

Claim 4 stands rejected under 35 U. S. C. § 112, second paragraph as being indefinite. In particular, the Examiner indicates that the phrasing of the claim is unclear that the detensioning members are fixed along inner and outer peripheral surfaces of the frame. Claim 4 has been amended to clarify that the detensioning members are detensioning members "fixed along the peripheral surfaces of said sides" and "have a second coefficient of thermal expansion" that may be either greater than said first coefficient of thermal expansion or lower than said first coefficient of thermal expansion. In view of the amendment to claim 4, the basis for the Examiner's rejection thereof pursuant to 35 U. S. C. § 112 has been removed. As such, it is respectfully requested that this rejection be withdrawn.

B. 35 U. S. C. § 102

1. Claims 1, 3 and 6-8 are not anticipated by Kume et al.

Claims 1, 3 and 6-8 stand rejected under 35 U. S. C. § 102(b) as being anticipated by Kume et al. (U. S. Patent 5,111,107 issued May 5, 1992). The applicants submit that these claims are not anticipated by this reference.

Claim 1 is directed toward a tension mask frame assembly 10 for a CRT 1 (*see*, FIG. 1 and the specification at page 1, lines 7-8). The tension mask frame assembly 10 includes a substantially rectangular mask support frame 20 having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other (*see*, FIG. 2 and the specification at page 3, lines 20-25). The mask support frame 20 has a pair of opposing long sides 22, 24 extending in parallel to the major axis and a pair of opposing short sides 26, 28 extending in parallel to the minor axis each sides having an outer peripheral surface 23, 29 and an inner peripheral surface 25, 27 (*see*, FIG. 2 and the specification at page 3, lines 25-27). A tension mask 30 is supported between a pair of support blade members 40 (*see*, FIG. 2 and the specification at page 3, lines 28-32). The support blade members 40 are attached to the frame at an attachment points 33 along a respective one of the pair of opposing long sides 22, 24 (*see*, FIGS. 3-7 specification at page 3, lines 31-33). A detensioning member 31, 32 is fixed along one of the outer 23, 29 and inner 25, 27 peripheral surfaces of one of the pair of opposing long sides 22, 24 and the pair of opposing short sides 26, 28 (*see*, FIGS. 2-7 and the specification at page 4, lines 4-23). The detensioning member 31, 32 has a second coefficient of thermal expansion such that attachment points 33 are drawn toward each other during thermal cycling of said mask frame assembly 10 (*see*, specification at page 12-21).

Kume et al. describes a grid apparatus for a color cathode ray tube (*see*, Kume et al. at column 1, lines 8-10). The grid apparatus has a frame 5 with support members 3, 4 (*see*, Kume et al. at FIG. 2 and column 2, lines 45-57).

Metallic members 9 are attached to the underside of support members 3, 4 and have a higher coefficient of thermal expansion than that of the support members 3, 4 (*see*, Kume et al. at FIG. 2 and column 2, lines 58-64).

Kume et al. does not describe or suggest a tension mask frame assembly for a CRT including a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other where the mask support frame has a pair of opposing long sides extending in parallel to the major axis and a pair of opposing short sides extending in parallel to the minor axis each sides having an outer peripheral surface and an inner peripheral surface wherein a tension mask is supported between a pair of support blade members where the support blade members are attached to the frame at an attachment points along a respective one of the pair of opposing long sides and a detensioning member is fixed along one of the outer and inner peripheral surfaces of one of the pair of opposing long sides and the pair of opposing short sides, the detensioning member having a second coefficient of thermal expansion such that the attachment points are drawn toward each other during thermal cycling of said mask frame assembly. Rather, Kume et al. describes a grid apparatus for a color cathode ray tube having a frame with support members, wherein metallic members are attached to the underside of support members and have a higher coefficient of thermal expansion than that of the support members. Since Kume et al. does not teach use of a tension mask frame assembly for a CRT including a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other where the mask support frame has a pair of opposing long sides extending in parallel to the major axis and a pair of opposing short sides extending in parallel to the minor axis each sides having an outer peripheral surface and an inner peripheral surface wherein a tension mask is supported between a pair of support blade members where the support blade members are attached to the frame at an attachment points along a respective one of the pair of opposing long

sides and a detensioning member is fixed along one of the outer and inner peripheral surfaces of one of the pair of opposing long sides and the pair of opposing short sides, the detensioning member having a second coefficient of thermal expansion such that the attachment points are drawn toward each other during thermal cycling of said mask frame assembly, claim 1 is patentable over Kume et al.

Claim 3 and 6-8 depend directly, or indirectly, from claim 1. In view of such dependence on claim 1, the applicants submit that claims 3 and 6-8 are also patentable over Kume et al.

2. Claims 1-2 and 6-13 are not anticipated by Ragland et al.

Claims 1-2 and 6-13 stand rejected under 35 U. S. C. § 102(b) as being anticipated by Ragland et al. (U. S. Patent 5,932,957 issued August 3, 1997). The applicants submit that these claims are not anticipated by this reference.

Claim 1 is directed toward a tension mask frame assembly 10 for a CRT 1 (*see*, FIG. 1 and the specification at page 1, lines 7-8). The tension mask frame assembly 10 includes a substantially rectangular mask support frame 20 having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other (*see*, FIG. 2 and the specification at page 3, lines 20-25). The mask support frame 20 has a pair of opposing long sides 22, 24 extending in parallel to the major axis and a pair of opposing short sides 26, 28 extending in parallel to the minor axis each sides having an outer peripheral surface 23, 29 and an inner peripheral surface 25, 27 (*see*, FIG. 2 and the specification at page 3, lines 25-27). A tension mask 30 is supported between a pair of support blade members 40 (*see*, FIG. 2 and the specification at page 3, lines 28-32). The support blade members 40 are attached to the frame at an attachment points 33 along a respective one of the pair of opposing long sides 22, 24 (*see*, FIGS. 3-7 specification at page 3, lines 31-33). A detensioning member 31, 32 is fixed along one of the outer 23, 29 and inner 25, 27 peripheral

surfaces of one of the pair of opposing long sides 22, 24 and the pair of opposing short sides 26, 28 (*see*, FIGS. 2-7 and the specification at page 4, lines 4-23). The detensioning member 31, 32 has a second coefficient of thermal expansion such that attachment points 33 are drawn toward each other during thermal cycling of said mask frame assembly 10 (*see*, specification at page 12-21).

Ragland et al. describes a detensioning rod assembly 60 for a color cathode ray tube (*see*, Ragland et al. at FIG. 3 and column 3, lines 8-16). The detensioning rod assembly 60 is attached to and between legs 62, 64 of U-shaped frame members 40, 42 (*see*, Ragland et al. at FIG. 3 and column 3, lines 21-30).

Ragland et al. does not describe or suggest a tension mask frame assembly for a CRT including a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other where the mask support frame has a pair of opposing long sides extending in parallel to the major axis and a pair of opposing short sides extending in parallel to the minor axis each sides having an outer peripheral surface and an inner peripheral surface wherein a tension mask is supported between a pair of support blade members where the support blade members are attached to the frame at an attachment points along a respective one of the pair of opposing long sides and a detensioning member is fixed along one of the outer and inner peripheral surfaces of one of the pair of opposing long sides and the pair of opposing short sides, the detensioning member having a second coefficient of thermal expansion such that the attachment points are drawn toward each other during thermal cycling of said mask frame assembly. Rather, Ragland et al. describes a completely different arrangement in which a detensioning rod assembly for a color cathode ray tube is attached to and between legs of U-shaped frame members. Since Ragland et al. does not teach use of a tension mask frame assembly for a CRT including a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis

perpendicular to each other where the mask support frame has a pair of opposing long sides extending in parallel to the major axis and a pair of opposing short sides extending in parallel to the minor axis each sides having an outer peripheral surface and an inner peripheral surface wherein a tension mask is supported between a pair of support blade members where the support blade members are attached to the frame at an attachment points along a respective one of the pair of opposing long sides and a detensioning member is fixed along one of the outer and inner peripheral surfaces of one of the pair of opposing long sides and the pair of opposing short sides, the detensioning member having a second coefficient of thermal expansion such that the attachment points are drawn toward each other during thermal cycling of said mask frame assembly, claim 1 is patentable over Ragland et al.

Claim 9 recites similar subject matter as claim 1. In view of the above, claim 9 is also patentable over Ragland et al. Also, claims 2, 6-8 and 10-13 depend directly, or indirectly, from claim 1 or 9. In view of such dependence on claim 1 or 9, the applicants submit that claims 2, 6-8 and 10-13 are also patentable over Ragland et al.

3. Claims 4-5 are not anticipated by Van Der Wilk

Claims 4-5 stand rejected under 35 U. S. C. § 102(e) as being anticipated by Van Der Wilk (U. S. Patent 6,686,684 issued February 3, 2004). The applicants submit that these claims are not anticipated by this reference.

Claim 4 is directed toward a tension mask frame assembly 10 for a CRT 1 (*see*, FIG. 1 and the specification at page 1, lines 7-8). The tension mask frame assembly 10 includes a substantially rectangular mask support frame 20 having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other (*see*, FIG. 2 and the specification at page 3, lines 20-25). The mask support frame 20 has a pair of opposing long sides 22, 24 extending in parallel to the major axis and a pair of opposing short

sides 26, 28 extending in parallel to the minor axis each sides having an outer peripheral surface 23, 29 and an inner peripheral surface 25, 27 (*see*, FIG. 2 and the specification at page 3, lines 25-27). A tension mask 30 is supported between a pair of support blade members 40 (*see*, FIG. 2 and the specification at page 3, lines 28-32). The support blade members 40 are attached to the frame at an attachment points 33 along a respective one of the pair of opposing long sides 22, 24 (*see*, FIGS. 3-7 specification at page 3, lines 31-33). A detensioning member 31, 32 is fixed along one of the outer 23, 29 and inner 25, 27 peripheral surfaces of one of the pair of opposing long sides 22, 24 and the pair of opposing short sides 26, 28 (*see*, FIGS. 2-7 and the specification at page 4, lines 4-23). The detensioning member 31, 32 has a second coefficient of thermal expansion such that attachment points 33 are drawn toward each other during thermal cycling of said mask frame assembly 10 (*see*, specification at page 12-21).

Van Der Wilk describes a tension mask and frame (*see*, Van Der Wilk at column 1, lines 8-10). The mask frame has a mask frame 9 positioned on metal strips 11, 12 (*see*, Van Der Wilk at FIG. 4 and column 3, line 60 to column 4, line 11). The mask frame 9 and strips 11, 12 have different coefficients of thermal expansion (*see*, Van Der Wilk at column 4, lines 5-9).

Van Der Wilk does not describe or suggest a tension mask frame assembly for a CRT including a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other where the mask support frame has a pair of opposing long sides extending in parallel to the major axis and a pair of opposing short sides extending in parallel to the minor axis each sides having an outer peripheral surface and an inner peripheral surface wherein a tension mask is supported between a pair of support blade members where the support blade members are attached to the frame at an attachment points along a respective one of the pair of opposing long sides and a detensioning member is fixed along one of the outer and inner peripheral surfaces of one of the pair of opposing long sides and the pair of opposing short sides, the detensioning member having a second coefficient of thermal expansion such that the

attachment points are drawn toward each other during thermal cycling of said mask frame assembly. Rather, Van Der Wilk describes a mask frame positioned on metal strips where the mask frame and strips have different coefficients of thermal expansion. Since Van Der Wilk does not teach use of a tension mask frame assembly for a CRT including a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other where the mask support frame has a pair of opposing long sides extending in parallel to the major axis and a pair of opposing short sides extending in parallel to the minor axis each sides having an outer peripheral surface and an inner peripheral surface wherein a tension mask is supported between a pair of support blade members where the support blade members are attached to the frame at an attachment points along a respective one of the pair of opposing long sides and a detensioning member is fixed along one of the outer and inner peripheral surfaces of one of the pair of opposing long sides and the pair of opposing short sides, the detensioning member having a second coefficient of thermal expansion such that the attachment points are drawn toward each other during thermal cycling of said mask frame assembly, claim 4 is patentable over Van Der Wilk.

Claim 5 depends directly from claim 4. In view of such dependence on claim 4, the applicants submit that claim 5 is also patentable over Van Der Wilk.

C. 35 U. S. C §103

1. Claims 9-13 are not obvious over Kume et al. in view of Ragland et al.

Claims 9-13 stand rejected under 35 U. S. C. § 103(a) as obvious over Kume et al. (U. S. Patent 5,111,107 issued May 5, 1992) in view of Ragland et al. (U. S. Patent 5,932,957 issued August 3, 1997). The applicants submit that these claims are not rendered obvious by the combination of these references.

Claim 9 is directed toward a tension mask frame assembly 10 for a CRT 1 (*see*, FIG. 1 and the specification at page 1, lines 7-8). The tension mask frame assembly 10 includes a substantially rectangular mask support frame 20 having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other (*see*, FIG. 2 and the specification at page 3, lines 20-25). The mask support frame 20 has a pair of opposing long sides 22, 24 extending in parallel to the major axis and a pair of opposing short sides 26, 28 extending in parallel to the minor axis each sides having an outer peripheral surface 23, 29 and an inner peripheral surface 25, 27 (*see*, FIG. 2 and the specification at page 3, lines 25-27). A tension mask 30 is supported between a pair of support blade members 40 (*see*, FIG. 2 and the specification at page 3, lines 28-32). The support blade members 40 are attached to the frame at an attachment points 33 along a respective one of the pair of opposing long sides 22, 24 (*see*, FIGS. 3-7 specification at page 3, lines 31-33). A detensioning member 31, 32 is fixed along one of the outer 23, 29 and inner 25, 27 peripheral surfaces of one of the pair of opposing long sides 22, 24 and the pair of opposing short sides 26, 28 (*see*, FIGS. 2-7 and the specification at page 4, lines 4-23). The detensioning member 31, 32 has a second coefficient of thermal expansion such that attachment points 33 are drawn toward each other during thermal cycling of said mask frame assembly 10 (*see*, specification at page 12-21).

Kume et al. describes a grid apparatus for a color cathode ray tube (*see*, Kume et al. at column 1, lines 8-10). The grid apparatus has a frame 5 with support members 3, 4 (*see*, Kume et al. at FIG. 2 and column 2, lines 45-57). Metallic members 9 are attached to the underside of support members 3, 4 and have a higher coefficient of thermal expansion than that of the support members 3, 4 (*see*, Kume et al. at FIG. 2 and column 2, lines 58-64).

Kume et al. does not describe or suggest a tension mask frame assembly for a CRT including a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other where the mask support frame has a pair

of opposing long sides extending in parallel to the major axis and a pair of opposing short sides extending in parallel to the minor axis each sides having an outer peripheral surface and an inner peripheral surface wherein a tension mask is supported between a pair of support blade members where the support blade members are attached to the frame at an attachment points along a respective one of the pair of opposing long sides and a detensioning member is fixed along one of the outer and inner peripheral surfaces of one of the pair of opposing long sides and the pair of opposing short sides, the detensioning member having a second coefficient of thermal expansion such that the attachment points are drawn toward each other during thermal cycling of said mask frame assembly. Rather, Kume et al. describes a grid apparatus for a color cathode ray tube having a frame with support members, wherein metallic members are attached to the underside of support members and have a higher coefficient of thermal expansion than that of the support members. Since Kume et al. does not teach use of a tension mask frame assembly for a CRT including a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other where the mask support frame has a pair of opposing long sides extending in parallel to the major axis and a pair of opposing short sides extending in parallel to the minor axis each sides having an outer peripheral surface and an inner peripheral surface wherein a tension mask is supported between a pair of support blade members where the support blade members are attached to the frame at an attachment points along a respective one of the pair of opposing long sides and a detensioning member is fixed along one of the outer and inner peripheral surfaces of one of the pair of opposing long sides and the pair of opposing short sides, the detensioning member having a second coefficient of thermal expansion such that the attachment points are drawn toward each other during thermal cycling of said mask frame assembly, claim 9 is patentable over Kume et al.

Ragland et al. describes a detensioning rod assembly 60 for a color cathode ray tube (*see*, Ragland et al. at FIG. 3 and column 3, lines 8-16). The detensioning rod assembly 60 is attached to and between legs 62, 64 of U-shaped frame members 40, 42 (*see*, Ragland et al. at FIG. 3 and column 3, lines 21-30).

Ragland et al. does not describe or suggest a tension mask frame assembly for a CRT including a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other where the mask support frame has a pair of opposing long sides extending in parallel to the major axis and a pair of opposing short sides extending in parallel to the minor axis each sides having an outer peripheral surface and an inner peripheral surface wherein a tension mask is supported between a pair of support blade members where the support blade members are attached to the frame at an attachment points along a respective one of the pair of opposing long sides and a detensioning member is fixed along one of the outer and inner peripheral surfaces of one of the pair of opposing long sides and the pair of opposing short sides, the detensioning member having a second coefficient of thermal expansion such that the attachment points are drawn toward each other during thermal cycling of said mask frame assembly. Rather, Ragland et al. describes a completely different arrangement in which a detensioning rod assembly for a color cathode ray tube is attached to and between legs of U-shaped frame members. Since Ragland et al. does not teach use of a tension mask frame assembly for a CRT including a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other where the mask support frame has a pair of opposing long sides extending in parallel to the major axis and a pair of opposing short sides extending in parallel to the minor axis each sides having an outer peripheral surface and an inner peripheral surface wherein a tension mask is supported between a pair of support blade members where the support blade

members are attached to the frame at an attachment points along a respective one of the pair of opposing long sides and a detensioning member is fixed along one of the outer and inner peripheral surfaces of one of the pair of opposing long sides and the pair of opposing short sides, the detensioning member having a second coefficient of thermal expansion such that the attachment points are drawn toward each other during thermal cycling of said mask frame assembly, claim 9 is patentable over Ragland et al.

Since Kume et al. only teaches a grid apparatus for a color cathode ray tube having a frame with support members, wherein metallic members are attached to the underside of support members and have a higher coefficient of thermal expansion than that of the support members and Ragland et al teaches a detensioning rod assembly for a color cathode ray tube is attached to and between legs of U-shaped frame members, the combination of these references does not describe or suggest applicants arrangement recited in claim 9. In claim 9, a tension mask frame assembly for a CRT is described including a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other where the mask support frame has a pair of opposing long sides extending in parallel to the major axis and a pair of opposing short sides extending in parallel to the minor axis each sides having an outer peripheral surface and an inner peripheral surface wherein a tension mask is supported between a pair of support blade members where the support blade members are attached to the frame at an attachment points along a respective one of the pair of opposing long sides and a detensioning member is fixed along one of the outer and inner peripheral surfaces of one of the pair of opposing long sides and the pair of opposing short sides, the detensioning member having a second coefficient of thermal expansion such that the attachment points are drawn toward each other during thermal cycling of said mask frame assembly. Thus, claim 9 is patentable over the combination of these references.

Claim 10-13 depend directly, or indirectly, from claim 9. In view of such dependence on claim 9, the applicants submit that claims 10-13 are also patentable over Kume et al. in view of Ragland et al.

CONCLUSION

Thus, the applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Furthermore, the applicants believe that all of the claims now satisfy the requirements of 35 U. S. C. § 112. Thus, the applicants believe that all of these claims are in allowable form. this application is presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Ms. Patricia A. Verlangieri, at (609) 734-6867, so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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